

Contents

Foreword	v
Preface	vii
Contributors	xiii
Color Plates	xix
Part I Electroporation	
1 Short History of Electroporation for the Study of Developmental Biology	3
Harukazu Nakamura	
2 In Ovo Electroporation as a Useful Tool to Pursue Molecular Mechanisms of Neural Development in Chick Embryos	9
Noritaka Odani, Xubin Hou, and Harukazu Nakamura	
3 Applications of <i>Tol2</i> Transposon-Mediated Gene Transfer for Stable Integration and Conditional Expression of Electroporated Genes in Chicken Embryos	17
Yuki Sato and Yoshiko Takahashi	
4 Temporal Control of Gene Expression by Combining Electroporation and the Tetracycline Inducible Systems in Vertebrate Embryos	25
Julien Dubrulle and Olivier Pourquié	
5 In Ovo Electroporation for Targeting the Somitic Mesoderm	37
Emi Ohata and Yoshiko Takahashi	

6	Method of Electroporation for the Early Chick Embryo	43
	Jun Hatakeyama and Kenji Shimamura	
7	Enhancer Analysis: Strategies for Locus-Wide Identification and Systematic Analysis of Enhancers Using Chicken Embryo Electroporation	55
	Masanori Uchikawa and Tatsuya Takemoto	
8	Electroporation of Nucleic Acids into Chick Endoderm Both In Vitro and In Ovo	73
	Kimiko Fukuda	
9	Electroporation into the Limb: Beyond Misexpression	85
	Takayuki Suzuki and Toshihiko Ogura	
10	Retinal Fiber Tracing by In Ovo Electroporation	97
	Hidekiyo Harada and Harukazu Nakamura	
11	Retroviral Vector-Mediated Gene Transfer into the Chick Optic Vesicle by In Ovo Electroporation	105
	Hiraki Sakuta, Ryoko Suzuki, and Masaharu Noda	
12	Clonal and Widespread Gene Transfer by Proviral Electroporation for Analysis of Brain Laminar Formation	117
	Sayaka Sugiyama and Harukazu Nakamura	
13	Electroporation into Cultured Mammalian Embryos	129
	Tadashi Nomura, Masanori Takahashi, and Noriko Osumi	
14	In Utero Electroporation: Assay System for Migration of Cerebral Cortical Neurons	143
	Hidenori Tabata and Kazunori Nakajima	
15	Practical Application of Microelectroporation into Developing Mouse Brain	153
	Tomomi Shimogori and Masaharu Ogawa	
16	Single Cell Electroporation Method for Mammalian CNS Neurons in Organotypic Slice Cultures	169
	Naofumi Uesaka, Yasufumi Hayano, Akito Yamada, and Nobuhiko Yamamoto	

17 Temporal and Tissue-Specific Control of Gene Expression in the Peri-Implantation Mouse Embryo Through Electroporation of dsRNA.....	179
Miguel L. Soares and Maria-Elena Torres-Padilla	
18 Gene Transfer into Mouse Haemogenic Sites, as a Mean to Functionally Approach the Control of Mesoderm Determination Towards a Haematopoietic Fate.....	201
Anna-Lila Kaushik, Sébastien J. D. Giroux, Michèle Klaine, Ali Jalil, Yann Lécluse, and Isabelle Godin	
19 Electroporation of Embryonic Kidney Explants.....	219
Nicholas Haddad, Daniel Houle, and Indra R. Gupta	
20 Transfer of Foreign DNA into Aquatic Animals by Electroporation.....	229
Thomas T. Chen, Maria J. Chen, Tzu-Ting Chiou, and J. K. Lu	
21 Electroporation in the Regenerating Tail of the <i>Xenopus</i> Tadpole.....	239
Makoto Mochii and Yuka Taniguchi	
22 Electrotransfer of Plasmid Vector DNA into Muscle.....	249
Satsuki Miyazaki and Jun-ichi Miyazaki	
23 Bone Formation by BMP Gene Transfection	263
Koshi N. Kishimoto and Yuji Watanabe	
24 Electroporation of the Testis	271
Kentaro Yomogida	
25 Direct Gene Transfer into Plant Mature Seeds via Electroporation After Vacuum Treatment	285
Takashi Hagio	
26 RNA Interference in Chicken Embryos.....	295
Nick J. Van Hateren, Rachel S. Jones, and Stuart A. Wilson	
Part II Sonoporation	
27 Sonoporation in Developmental Biology.....	317
Sho Ohta, Kentaro Suzuki, Shinichi Miyagawa, Yukiko Ogino, Mylah Villacorte, Yoshihiro Wada, and Gen Yamada	
Index.....	327

Electroporation and Sonoporation in Developmental
Biology

Nakamura, H. (Ed.)

2009, XXIX, 331 p., Softcover

ISBN: 978-4-431-09426-5